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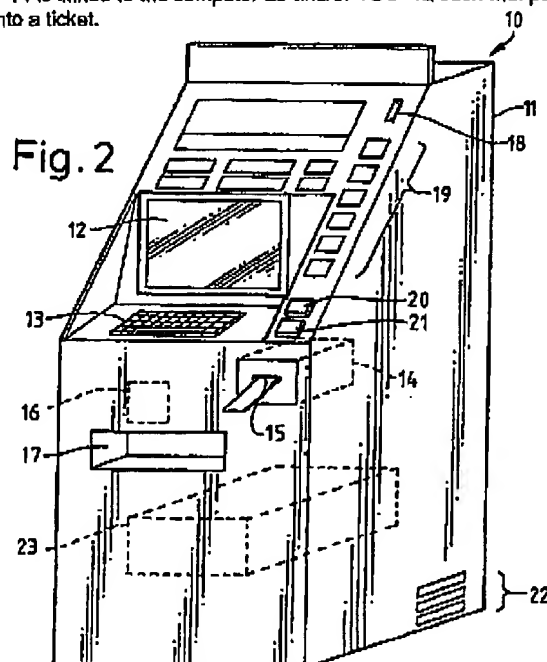
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GB 2175427 A WO 91/06931 A1 US 4833307 A  
US 4157329 A

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(54) Lottery/gaming apparatus and methods

(57) A lottery/gaming machine 10 comprises a cabinet 11 which houses a VDU screen 12, an alpha-numeric keyboard 13, a ticket printing machine 14, having an output slot 15, a coin dispenser 16 for dispensing coins into a coin tray 17, a coin slot 18 for input of coins, instant prize indicators 19, pay-out option button 20, start/stop button 21, cable sockets 22 and a computer 23. The computer is programmed to generate random permutations of 2 to 6 eg three letters and display these on the VDU screen 12 and to commit to a memory which permutations have been generated already so that no permutation is provided more than once. Alternatively a pre-programmed chip, disc or tape having random permutations of letters thereon may be loaded into the computer 23 and permutations, in a predetermined order, for display on the VDU screen, may then be read therefrom. The printer 14 is linked to the computer 23 and/or VDU 12 such that permutations of letters, amongst other things may be printed onto a ticket.

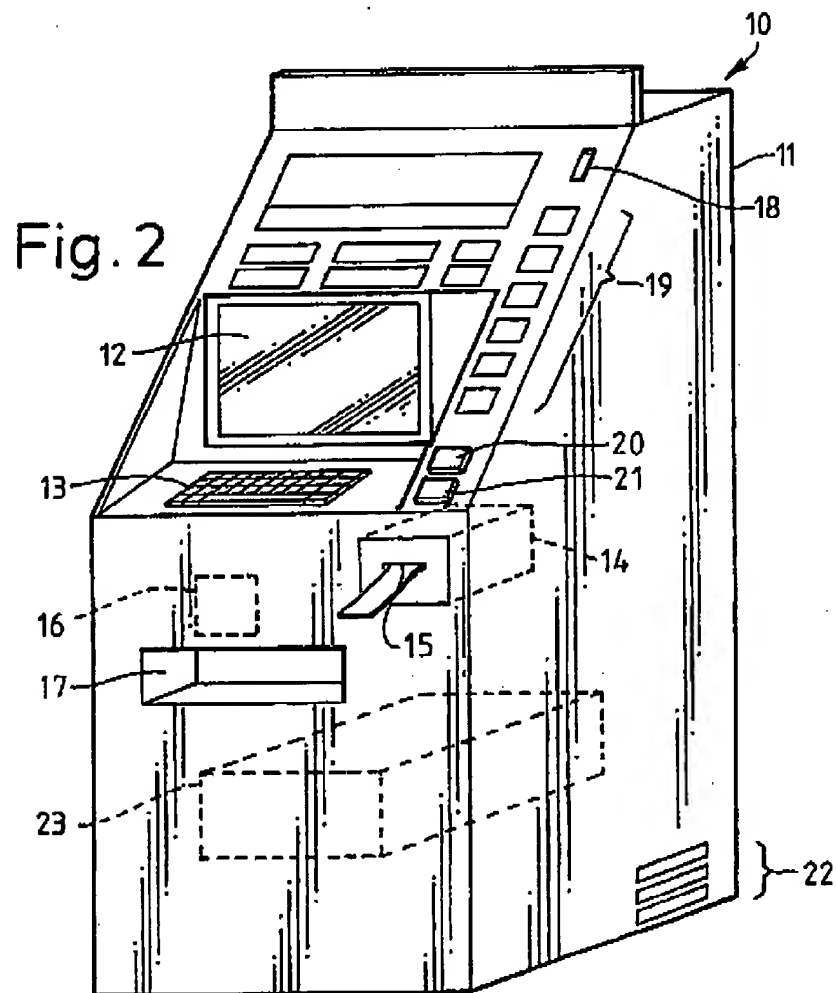
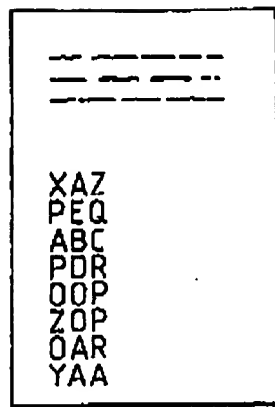


At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

The claims were filed later than the filing date within the period prescribed by Rule 25(1) of the Patents Rules 1990.

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- 1 -

LOTTERY/GAMING APPARATUS AND METHODS.

This invention relates to lottery/gaming apparatus and methods.

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According to one aspect of the present invention, there is provided a lottery/gaming machine which comprises:

10 character permutation providing means for providing permutations of characters to be displayed;

a display means for displaying at least one permutation of characters, the display means being  
15 arranged to be updated so as to be capable of displaying other permutations of characters;

imprinting means for providing, on a ticket, at least one permutation of characters.

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In the context of this specification, the term "ticket" should be construed to include any means on which a visual image may be recorded and displayed.

25 In the context of this specification, the term "character" should be construed to include a letter, numeral or other symbol.

Preferably, said imprinting means is arranged to  
30 provide, on said ticket, at least one permutation of characters displayed substantially concurrently on said display means or a permutation of characters related thereto.

- 2 -

Said character permutation providing means may comprise means for generating permutations of characters. Suitably, said means for generating is arranged to generate randomly permutations of characters, when  
5 required. For example, said character permutation providing means may include a computer programmed to generate random permutations of characters. Alternatively, said means for generating may comprise a first removable memory device in which a plurality of  
10 permutations of characters are stored in a predetermined sequence. In this case, said first removable memory device may be inserted into and removed from the machine so that memory devices which include permutations of characters in different sequences may be inserted as and  
15 when required. For example, the machine may include a socket into which said memory device may be removably plugged.

The invention extends to a removable memory device as  
20 described herein for a lottery/gaming machine as described herein per se.

Said lottery/gaming machine suitably includes a second memory device which is preferably an integral part  
25 of said machine, the machine including updating means for updating the second memory device with permutations of characters already displayed. The machine is preferably arranged such that no permutation of characters is displayed more than once until such a time that all  
30 possible permutations of characters have been displayed. Where the machine includes means for generating random permutations of characters, a permutation newly generated may be compared with each permutation already generated and which is stored in said second memory device so that  
35 no permutations of characters may be displayed more than

- 3 -

once until all possible permutations of characters have been displayed. Resetting means may be provided for clearing said second memory device. This may be done before all permutations of characters have been displayed, if desired, so that a new game may be started.

The characters may conveniently be alpha-numerical characters. Preferably, said characters are represented by letters of the alphabet - for example, from the letter "A" to the letter "Z". A permutation of characters suitably comprises a plurality of characters, for example, a permutation of two to six characters. The machine may include selection means for selecting the number of characters to be included in a permutation of characters. For example, if it is desired in one game to have a permutation which comprises three letters (e.g. AGE, RKK, AER, MNB etc.) this will provide  $26^3$  possible permutations. The lottery/gaming machine may then be played over a period of time until all possible permutations are exhausted or until a specified date, when the machine may be reset.

The display means may be in any suitable form but preferably comprises a VDU screen. It may alternatively comprise a mechanical display means, for example, spinning reels. In each case, it will be appreciated that the display means may be readily updated with new permutations of characters. The display means is suitably arranged to display other information, for example, relating to a future event upon which the winner of a lottery is based or user information - i.e. name, address etc.

Said imprinting means suitably comprises any suitable printing means, for example, a thermal printer, a dot matrix printer, a laser jet printer etc. Said printing

- 4 -

means is suitably arranged to print one or more permutations of characters on a ticket. The printer is suitably arranged to produce on a ticket the same permutation of characters displayed on the display means  
5 at substantially the same time. Alternatively, though less preferred, the display means may display characters which are different from those printed on a ticket. For example, the display means may display pictorial representations or symbols whereas the ticket may have  
10 letters printed thereon. Suitably, each pictorial representation or symbol is related in some way, for example, by a coding system, to a specific letter. For example, the letter "A" may be represented by the number "1"; the letter "B" by the number "2" and so on.

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The ticket is preferably made of paper or card. The lottery/gaming machine suitably includes a ticket output means, for example, an output slot, by means of which a ticket may be outputted from the machine.

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The machine suitably includes a ticket input means, by means of which a plurality of said tickets may be inputted into the machine.

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The invention extends to a lottery/gaming machine in combination with a plurality of tickets therefor, as described herein per se.

Preferably, the machine includes at least one user-operable keyboard, for example, a membrane keyboard, for  
30 inputting user information into the machine. The user information may be displayed on the display means. User information memory storage means is suitably provided for storing user information. Said user information memory  
35 storage means is preferably arranged to associate user

- 5 -

information for a specific user with one or more permutations of characters which have been assigned to that specific user.

5       The machine preferably includes machine operation means, the operation of which initiates the display of permutations of characters. Said machine operation means may include a coin or token input arrangement via which a user may input a coin or token.

10       The machine may further include prize output means for delivery of a prize to a winning user of the machine. Said prize output means may include, for example, an output means for coins or tokens.

15       The invention extends to the use of a machine as described herein as a lottery/gaming machine.

20       According to another aspect of the invention, there is provided a lottery/gaming machine network, the network comprising a plurality of lottery/gaming machines as described herein and a central character permutation providing means, linking means being provided for transfer of data from said central character permutation providing means to each lottery/gaming machine.

25       Preferably, the central character permutation providing means includes a character generation means arranged to generate permutations of characters. Suitably, said generation means is arranged to generate randomly permutations of characters, when required. Permutations of characters generated may be sent to each said lottery/gaming machine when required. Said central character permutation providing means preferably include  
30       a third memory device and a third memory device updating  
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- 6 -

means for updating the third memory device with permutations of characters which have already been sent to a said lottery/gaming machine so that no permutation of characters is sent to a lottery/gaming machine more than  
5 once, unless the central character permutation providing means is reset using a central character permutation providing means reset means.

Said central character permutation providing means  
10 may be linked to each lottery/gaming machine by means of a modem link, a satellite link, a cable link or any other suitably means.

The invention extends to the use of a network of  
15 machines as described herein as a lottery/gaming machine network.

The invention extends to a method of playing a lottery/gaming machine which includes central permutation  
20 providing means for providing permutations of characters to be displayed, a display means for displaying at least one permutation of characters and imprinting means for providing, on a ticket, at least one permutation of characters, the method comprising the steps of:

25 causing the central permutation providing means to generate a permutation of characters which are displayed on the display means;

30 assessing whether the permutation of characters displayed is a winning permutation by comparing the characters with pre-determined winning permutation(s);

causing the machine to print a permutation of  
35 characters on a ticket; and



- 7 -

assessing whether the permutation of characters on the ticket is a winning permutation by comparing the characters with a post-determined permutation of characters.

5

Preferably, said imprinting means is arranged to provide, on said ticket, at least one permutation of characters displayed substantially concurrently on said display means or a permutation of characters related thereto.

10

Preferably, the assessment of whether the permutation of characters displayed on the display means is a winning permutation is carried out at substantially the same time as the characters are displayed. Preferably, the assessment of whether the permutation of characters displayed on the ticket is a winning permutation is carried out at a future date.

15

The lottery/gaming machine of said method is suitably as described herein. The method may be used in conjunction with a lottery/gaming machine network as described herein.

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The invention extends to a method of running a lottery, the method comprising:

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selecting a future event;

distributing a plurality of tickets each of which includes at least one permutation of letters thereon or characters thereon which may be associated with letters;

30

after said future event selected has occurred, assessing who is a winner of the lottery by comparing a

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- 8 -

permutation of letters or characters on a said ticket with letters associated with the pre-determined future event according to pre-determined criteria.

5        Said pre-determined criteria may comprise taking one letter, for example, the first letter of the first or only name of the winner, second place and third place of the event as comprising the winning permutation.

10       The method may include the use of any apparatus described herein.

Specific embodiments of the invention will now be described, by way of example, with reference to the  
15       accompanying diagrammatic drawings, in which:

Figure 1 is a lottery ticket; and

Figure 2 is a perspective view of a lottery/gaming  
20       machine.

The lottery ticket 1, shown in figure 1, includes eight different permutations, each of three letters. Each permutation of three letters represents one chance of  
25       winning a prize. Winning permutations are assessed as follows.

Before any lottery tickets are sold, a future event is selected from which to assess the winner. For example,  
30       the Grand National horse race may be selected as the future event. Lottery tickets are then sold. Each ticket has eight different permutations each of three letter printed thereon. No permutations are printed more than once. The Grand National is then run. If the first three  
35       horses in the race are called Polso, Dandy Boy and Red

- 9 -

Rum, then taking the first letter of each name provides the permutation of letters FDR which is deemed the winning permutation. Thus, the 4th permutation on the ticket shown in figure 1 is a winning ticket.

5

It will be appreciated that in any one lottery any number of letters may be included in a permutation, depending on the number of possible permutations of letters required; any number of different permutations may be provided on a ticket; and the winning permutation may be based on any future event.

15 A lottery/gaming machine for running the lottery described above is shown in figure 2. Referring to the figure, the lottery/gaming machine 10 comprises a cabinet 11 which houses a VDU screen 12, an alpha-numeric keyboard 13, a ticket printing machine 14, having an output slot 15, a coin dispenser 16, for dispensing coins into a coin tray 17, a coin slot 18 for input of coins, instant prize 20 indicators 19, payout option button 20, start/stop button 21, cable sockets 22 and a computer 23.

25 The computer 23 is programmed to generate random permutations of three letters and display these on the VDU screen 12. The computer is, in addition, programmed to commit to a memory which permutations have been generated already so that no permutation is provided more than once. As an alternative to the generation of random permutations within the machine 10, a pre-programmed chip, disc or tape 30 having random permutations of letters thereon may be loaded into the computer 23 and permutations, in a pre-determined order, for display on the VDU screen, are then read therefrom.

- 10 -

The printer 14 is linked to the computer 23 and/or VDU 12 such that permutations of letters, amongst other things, may be printed thereon.

5       A machine 10 may be placed in, for example, a club and operated as follows.

Firstly, an authorised officer of the club prepares the machine for use by the club's customers, as follows:

- 10       1) the machine is powered up and a unique key code is inputted, via a concealed keyboard (not shown) to identify the authority of the officer;
- 2) a "start" code is inputted to indicate that a new lottery is to be started. In this case, permutations  
15 of letters generated in a previous lottery are wiped clean from the memory of computer 23;
- 3) the owner's code and name are inputted;
- 4) the number of the lottery is inputted;
- 5) details relating to the future event, for  
20 example, the Grand National, are inputted;
- 6) an "end" code is inputted;
- 7) a check is made to ensure adequate supply of tickets and correct functioning of printer 14.

25       A customer of the club may now use the machine 10, as follows:

- 1) the customer inserts a coin to obtain, for  
example, 8 chances for £1.00.
- 30       2) start button 21 is pressed.
- 3) the machine displays a first permutation of three letters on the VDU screen 12;
- 4) if the first permutation is identical to pre-determined "instant prize" permutations ( e.g. AAA, BBB,  
35 ..., ZZZ etc ) displayed on the machine, the machine will

- 11 -

indicate that a prize has been won and may either allow winnings to be collected using the button 20 or remember the winning permutation so that a prize may be claimed later;

5           5) steps 2), 3), 4) and 5) are repeated until all 8 chances have been used;

6) the machine will prompt the input of the customer's name and address which information is stored and printed subsequently upon a ticket;

10          7) the machine will now print a ticket, via printer 14, including information relating to all 8 permutations generated, any instant prize winners, the relevant future event in relation to which a main prize may be won, the name of the club and any relevant rules;

15          8) tickets may be handed in or forwarded to a person or place from which prizes can be obtained.

20           In due course, the machine may be reset and the authorised officer may carry out steps 1) to 7) described above again.

25           In a further embodiment, a national lottery may be run by means of a plurality of lottery/gaming machines 10, each of which is linked, by a modem, satellite or cable link, to a central lottery controlling computer. This computer generates random permutations of letters and sends such permutations to each machine 10 when requested, by a user. As with computer 23, the central lottery control means is arranged so as not to generate any  
30           permutations more than once.

35           The reader's attention is directed to all papers and documents which are filed concurrently with or previous to this specification in connection with this application and which are open to public inspection with this

- 12 -

specification, and the contents of all such papers and documents are incorporated herein by reference.

5 All of the features disclosed in this specification (including any accompanying claims, abstract and drawings), and/or all of the steps of any method or process so disclosed, may be combined in any combination, except combinations where at least some of such features and/or steps are mutually exclusive.

10

Each feature disclosed in this specification (including any accompanying claims, abstract and drawings), may be replaced by alternative features serving the same, equivalent or similar purpose, unless expressly stated otherwise. Thus, unless expressly stated otherwise, each feature disclosed is one example only of a generic series of equivalent or similar features.

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The invention is not restricted to the details of the foregoing embodiment(s). The invention extends to any novel one, or any novel combination, of the features disclosed in this specification (including any accompanying claims, abstract and drawings), or to any novel one, or any novel combination, of the steps of any method or process so disclosed.

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-13-

CLAIMS

1. A lottery/gaming machine comprising:

5 character permutation providing means for providing permutations of characters to be displayed;

a display means for displaying at least one permutation of characters, the display means being  
10 arranged to be updated so as to be capable of displaying other permutations of characters;

imprinting means for providing, on a ticket, at least one permutation of characters.

15

2. A machine according to Claim 1, wherein said character permutation providing means comprises means for generating permutations of characters.

20 3. A machine according to Claim 2, wherein said means for generating is arranged to generate randomly permutations of characters, when required.

4. A machine according to Claim 2 or Claim 3, wherein  
25 said means for generating comprises a first removable memory device in which a plurality of permutations of characters are stored in a predetermined sequence.

5. A machine according to any of the preceding claims,  
30 wherein the machine includes a second memory device which is an integral part of the machine, the machine including updating means for updating the second memory device with permutations of characters already displayed.

- 14 -

6. A machine according to any of the preceding claims,  
wherein the characters are alpha-numerical characters.
7. A machine according to any of the preceding claims,  
5 wherein said permutation of characters comprises a  
permutation of two to six characters.
8. A machine according to any of the preceding claims,  
wherein the machine includes selection means for selecting  
10 the number of characters to be included in a permutation  
of characters.
9. A machine according to any of the preceding claims,  
wherein the display means comprises a VDU screen.  
15
10. A machine according to any of the preceding claims,  
wherein the machine includes a ticket output means by  
means of which a ticket may be outputted from the machine.
- 20 11. A machine according to any of the preceding claims,  
the machine including at least one user-operable keyboard  
for inputting user information into the machine.
12. A machine according to any of the preceding claims,  
25 the machine including machine operation means, the  
operation of which initiates the display of permutations  
of characters.
13. A machine according to any of the preceding claims,  
30 the machine including prize output means for delivery of  
a prize to a winning user of the machine.
14. Use of a machine according to any of Claims 1 to 13,  
as a lottery/gaming machine.  
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- 15 -

15. A lottery/gaming machine network, the network comprising a plurality of lottery/gaming machines according to any of Claims 1 to 13 and a central character permutation providing means, a linking means being  
5 provided for transfer of data from said central character permutation providing means to each lottery/gaming machine.

16. Use of a network of machines as claimed in Claim 15,  
10 as a lottery/gaming machine network.

17. A method of playing a lottery/gaming machine which includes central permutation providing means for providing permutations of characters to be displayed, a display  
15 means for displaying at least one permutation of characters and imprinting means for providing, on a ticket, at least one permutation of characters, the method comprising the steps of:

20 causing the central permutation providing means to generate a permutation of characters which are displayed on the display means;

25 assessing whether the permutation of characters displayed is a winning permutation by comparing the characters with a pre-determined winning permutation;

causing the machine to print a permutation of characters on a ticket; and  
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assessing whether the permutation of characters on the ticket is a winning permutation by comparing the characters with a post-determined permutation of characters.  
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- 16 -

18. A method of running a lottery, the method comprising:

selecting a future event;

5 distributing a plurality of tickets each of which includes at least one permutation of letters thereon or characters thereon which may be associated with letters;

10 after said future event selected has occurred, assessing who is a winner of the lottery by comparing a permutation of letters or characters on a said ticket with letters associated with the pre-determined future event according to pre-determined criteria.

15 19. A lottery/gaming machine, use of a lottery/gaming machine, a lottery/gaming machine network, use of a lottery/gaming machine network, a method of playing a lottery/gaming machine and a method of running a lottery, each being substantially as hereinbefore described with  
20 reference to the accompanying diagrammatic drawings.

**Patents Act 1977**  
**Examiner's report to the Comptroller under**  
**Section 17 (The Search Report)**

Application number

9112372.9

**Relevant Technical fields**

(i) UK Cl (Edition K ) G4V (VAA VAL VBF VBK VJJ  
V118 V119)  
G4T (TAE)  
(ii) Int Cl (Edition 5 ) G07F 17/42

Search Examiner

G NICHOLLS

**Databases (see over)**

(i) UK Patent Office

(ii)

Date of Search

18 AUGUST 1992

Documents considered relevant following a search in respect of claims

1-17

Category (see over)	Identity of document and relevant passages	Relevant to claim(s)
X	GB 2175427 A (ELECTRONICS WORLD) see particularly page 2 lines 109-121	1-3,6, 9-12,14
X	WO 91/06931 A1 (RAHA-AUTOMAATTIYHDISTYS) whole document	1-3,7,9, 10,12,14
X	US 4833307 (GONZALEZ-JUSTIZ) see particularly column 2 lines 49-67	1,6,7,9, 10,11,12, 14
X	US 4157829 (SYSTEM OPERATIONS) see particularly column 2 lines 30-58 and column 4 lines 13-33	1-3,6,7, 9,10, 12-16

SF2(p)

TP - doc99\fil000253

-18-

Category	Identity of document and relevant passages	Relevant to claim(s)

**Categories of documents**

**X:** Document indicating lack of novelty or of inventive step.

**Y:** Document indicating lack of inventive step if combined with one or more other documents of the same category.

**A:** Document indicating technological background and/or state of the art.

**P:** Document published on or after the declared priority date but before the filing date of the present application.

**E:** Patent document published on or after, but with priority date earlier than, the filing date of the present application.

**&:** Member of the same patent family, corresponding document.

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